

# TeleCorder

## TC-02F and TC-04F Voice Logging Recorder



## User Manual

Version 2.42b-F-USA

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# TeleCorder

## Voice Logging Recorder — Models TC-02F & TC-04F

**TeleCorder** models **TC-02F** and **TC-04F** can simultaneously record analog audio from phone lines or other analog audio sources. Recordings start and stop automatically using either phone line voltage sensing or audio activation. They have an internal hard drive where the most recent 7,200 hours of digital call files are stored. While the recorder can be used as a stand alone unit, most users find it easier to set-up and use it with a PC (Win-2000/XP/Vista/Win-7) using the included USB cable and software.

### 1. TeleCorder Configurations

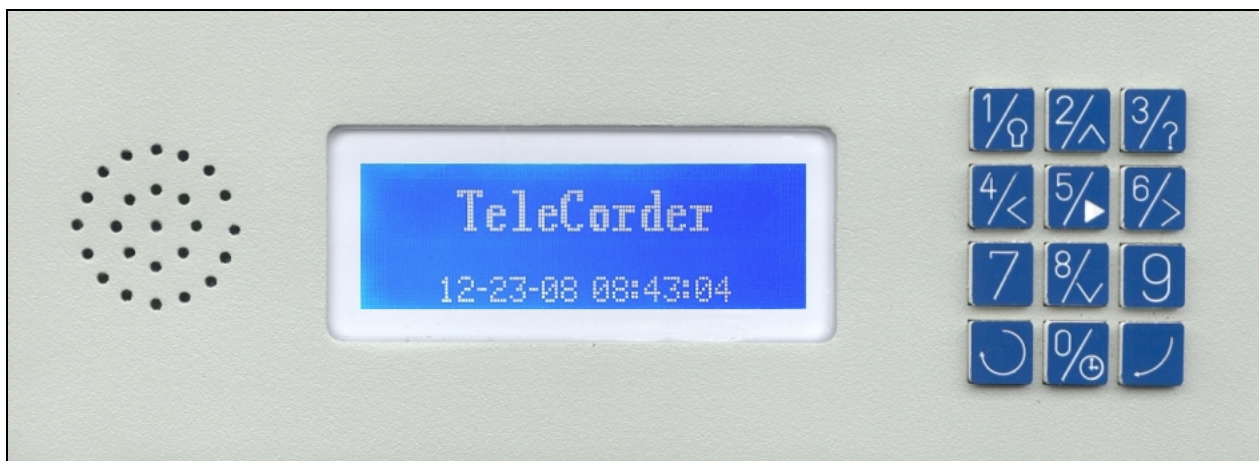
Model Type	2 Channel TC-02F	4 Channel TC-04F
Supplied Accessories (phone line cables)	2 each # T-18 (18' phone cable with "T" adapter)	2 each # MTJ-S2 (line splitter) 4 each # T-18 (18' phone cable)
Supplied Accessories (other)	USB cable, 110-120V AC Power Adapter (+5v DC), CD with <b>TeleCorder</b> PC software (Win-2000/XP/Vista/Win-7), & this manual.	

If you purchased optional items such as cables and/or adapters for installation to audio sources that do not terminate in standard RJ11 phone jacks, see the instructions that were provided with the optional accessories for additional installation and operation procedures.

### 2. Cable Connections and Testing

#### 2.1 Identify the Front Panel Components and Rear Panel Connections

Unpack and check the contents of the **TeleCorder** package. Locate the master password page and keep it in a secure place.



**TeleCorder** front view, showing speaker, LCD display and keypad.



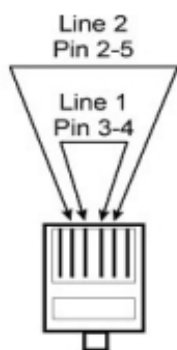
**TeleCorder rear view, showing USB jack for connecting to a computer, two modular phone jacks for connecting to the source of the conversations to be recorded, +5vDC input jack for connecting to power using the supplied AC adapter.**

## 2.2 Connecting to Phone Lines and other Audio Sources

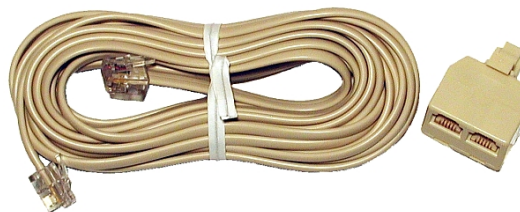
**TeleCorder** inputs require 2-wire analog audio such as from direct connection to analog phone lines, two-way radios, amplified microphones, telephone handset or headset audio (analog or digital phones, using direct connection to earpiece audio or optional TSA-3LM or TSA-SLM adapters), etc.

### 2.2.1 Connecting Audio Sources to the 2 Channel **TeleCorder** Model TC-02F

The **TeleCorder** connects in parallel to your audio sources. There are two modular phone jacks on the back of the **TeleCorder** Model TC-02F. Each jack is wired for connection to one of the two channels using the center pair of contacts (as with standard RJ-11 phone jacks). When looking at the back panel, the jack



on the left is for channel one (also called “Port 1”), and the jack on the right is for channel two (also called “Port 2”). The left jack is also wired for both channels as with standard RJ-14 phone jacks (see image at left — Ch-1 on inside pins 3+4, Ch-2 on adjacent pins 2+5). **Note:** If using the left jack only for connection to channel one, there must not be any connection to pins 2 & 5 as these pins also connect to pins 3 & 4 on the right jack.



Two T-18 cables (18' phone line cable with T-adaptor, photo at right) are supplied with the recorder. You can use these or other suitable cables to connect to your phone lines or other audio sources.

If you wish to record from multiple line analog phones or digital telephone sets, instead of individual phone lines, the most popular way to connect is with a handset splitter. The handset splitters (such as the Omnicron TSA-3LM or TSA-SLM) are available from your **TeleCorder** representative. Your sales representative can also assist you in selecting other cables or adapters to simplify installation for your application.

### 2.2.2 Connecting Audio Sources to the 4 Channel **TeleCorder** Model TC-04F

Each modular phone jack on the back of the **TeleCorder** TC-04F has connections for two phone lines or other audio sources. When looking at the back panel, the jack on the left is for Ports 1 and 2, the jack on the right is for Ports 3 and 4.

The modular jacks use pins 3 & 4 for the first input (center pair), and pins 2 & 5 for the second input (see the drawing above left). Each individual input can be referred to as either a Channel or Port.

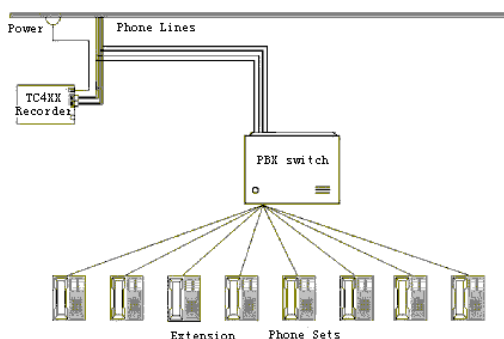
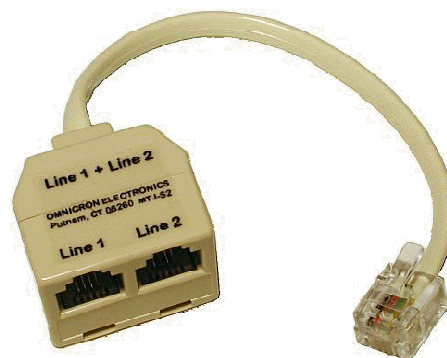
Connect audio sources for channels one and two using the left jack as with instructions for the two channel **TeleCorder** (see above section 2.2.1), and channels three and four to the right jack in a similar manner. The TC-04F is supplied with two of the MTJ-S2 splitters (see image on page 5) to provide individual jacks for each input and four T-18 cable sets for connecting to phone lines.



If you wish to record from multiple line analog phones or digital telephone sets, instead of individual phone lines, the most popular way to connect is with a handset splitter. The handset splitters (such as the Omnicron TSA-3LM, TSA-2A1, or TSA-SLM) are available from your **TeleCorder** representative. Your sales representative can also assist you in selecting other cables or adapters to simplify installation for your application.

If it is not convenient or possible to install using standard modular jacks, identify the pair of wires for each line or audio source and connect in parallel to each individual input on the **TeleCorder**.


With bundled phone wiring, you must first identify the line pairs among the wiring cables and then connect the wires from the **TeleCorder** inputs to these pairs. Equipment and wiring diagrams may be required to expedite proper installation. Check with your phone or wiring provider for assistance as needed.



## 2.3 Power Connection

Plug the supplied 5 volt power supply (photo at right) into a standard 110v AC outlet and connect its output cable to the **Power +5vDC** jack on the back of the **TeleCorder**. The LCD on the front of the recorder will light up blue to indicate that power is connected. Power Connection should be made after connecting telephone cables to the audio sources that you will be recording. Since the **TeleCorder** is designed to be in service 100% of the time, there is no power on/off switch. To turn the recorder OFF, unplug the AC power cord. To turn it ON, plug it in.



- To increase the brightness on the LCD display, press the  button.
- Press again to decrease the intensity of the LCD backlight.

## 2.4 Preliminary Testing

**Normal Operation:** After the above connections are completed, check the displayed status on the LCD.

- Text will be displayed on the LCD display a few seconds after external power is applied. Depress the “1” button to increase the brightness, depress it again to decrease the backlight brightness.
- With no activity on any of the **TeleCorder** inputs, the display will show **TeleCorder**, date and time. When inputs are active, the top line of the display will show: Recording and which inputs are active. By default, channels are set to Voice Activated Recording (VAR). If any **TeleCorder** inputs are connected to standard phone lines, these channels could be triggered by noise on the phone lines between calls. Use either the supplied PC software, or front panel buttons, to set phone line channels for voltage sensing start/stop.

## 2.5 Installing Software and Connection to a PC (Win-2000/XP/Vista/Win-7)

Install **TeleCorder** software from the CD included with your recorder prior to connecting the supplied USB cable from the recorder to the USB port on your computer.

If the recorder software is being installed on a multiple user PC, the installation directory should be a shared location or the “All Users” directory if you wish to allow access by all users. If connecting a **TeleCorder** to a PC that was previously used with a different version of **TeleCorder** software, you should remove the old **TeleCorder** program (PC Control Panel – Add/Remove Programs) prior to installing the new software.

See “**Read-Me**” notes on software CD for additional information and for a software tool that permits older recorders to be used with a 64-bit PC.

Insert the CD into the drive on your PC. If it does not auto run to show install procedure, look at files on the CD using file manager and open “**SetupTeleCorderV242\_StdEN.exe**” (Win-2000 through Win-7). Follow on screen instructions.



The **TeleCorder** program will now be installed in your computer, be listed under Programs, in Control Panel add/remove programs, and there should be an icon on the desktop for the **TeleCorder** (image at left).


**NOTE:** If you run the **TeleCorder** program without a **TeleCorder** connected to your PC via the USB cable, or if the **TeleCorder** power is off, you will see either “ERROR: No **TeleCorder** device connected!” or it will look for any **TCwL-B4 TeleCorder** models on the PC’s LAN.

The TeleCorder is normally left powered ON at all times, there is no power On/Off switch. To turn it OFF, unplug the power cord. If your **TeleCorder** is not already powered ON, connect it to AC power using the supplied AC adapter and wait for it to display time and date. Connect the supplied USB cable (photo at right) from the USB port on the back of the **TeleCorder** to a USB port on your computer. The first time you connect the **TeleCorder** to your computer, your PC should display “New Hardware Found” message, search for and install the required driver software (**FTDIV20600.dll**).

Run the **TeleCorder** program by clicking on the icon on your PC desktop that was created when the program was installed or from the Start/Programs list. Refer to manual section 3 (below) for detailed information.



## 3. Setup via USB Connection to PC

**3.1 Open Software** and run the **TeleCorder** program by clicking on the  icon on your PC desktop that was created when the program was installed or from the programs list if the icon is not on your desktop.

### 3.2 Recording Process

When connected to standard telephone lines, the **TeleCorder** will automatically record the telephone number called in or dialed out, time duration of the call and the voices of the conversation. You don’t need to change your procedure for making or receiving your calls. Nevertheless, the following points should be considered. When connected to phone lines, channels should be set to start/stop recording using the voltage sensing mode, not the VAR mode (hardware set-up from key-pad, or **Hardware** screen using a PC).

a) If Caller ID numbers are not displayed, confirm with your telephone company that your phone lines have the caller ID feature enabled. Otherwise, there will not be caller phone numbers recorded and displayed when managing the recordings. If you are connected to telephone handset audio, the recorder will not show caller numbers and will only show dialed out numbers if the handset has standard DTMF tones

when dialing. Also check to be sure phone line channels are set for voltage sensing, not for **VAR** start/stop.

b) Always wait to answer a call until after the second ring so that the phone number from the calling party can be received and stored with the recording.

c) When channels are set to start and stop recording using voltage sensing, outgoing calls will not be saved unless they are longer than 8 seconds and contain a minimum of 3 dialed digits (DTMF tones). This feature minimizes false recordings and does not apply when using Voice Activated Recording (**VAR**).

### 3.3 Setting for Phone Line or Voice Activated Recording (VAR)

When you first connect a new **TeleCorder**, default settings for all channels will be for Voice Activated Recording (**VAR**). Channels connected to phone lines should have their start/stop mode changed to the voltage sensing start/stop mode. In this mode, instead of monitoring audio levels, the recorder will monitor for DC voltages on the selected inputs to indicate on-hook and off-hook status. The phone line voltage is high when the circuit is not in use and will drop to a lower voltage when it is being used. Any channels set for on-hook/off-hook voltage sensing that are not connected to a phone line will not show any recordings due to the lack of the DC voltage changes that are required to initiate a recording in this mode.

If you connect any of the **TeleCorder** inputs to audio sources that do not have standard on-hook/off-hook voltages, these channels must be set for audio or voice activated recording (**VAR**).

### 3.4 VAR Settings (Voice Activated Recording)

Recorder channels set for the **VAR** mode will detect the voice level on the line to start a recording. It will start recording when a preset audio level is reached (normal conversation levels), and stop after the audio drops below this threshold (no sound other than weak background noise) for a preset period of time. The length of quiet required for the recording to end is called “turn off delay”.

	Phone Line Recording	Voice Activated Recording (VAR)
<b>Requirement to Start</b>	Phone Line DC voltage lower than the threshold (<20v DC)	Audio level on input is loud enough or louder than preset threshold required to start recording
<b>Requirement to Stop</b>	Phone Line DC voltage higher than the threshold (>20v DC)	Audio level is lower than preset level required to continue recording for the selected turn off delay
<b>Suggested Uses</b>	Recording from standard Analog phone lines	<ol style="list-style-type: none"><li>1. Radio recording, broadcast or two-way</li><li>2. Amplified microphone</li><li>3. Audio picked up from handset or headset of analog or digital telephone set (single or multi-line phone)</li><li>4. Analog phone line recording where DC voltage sensing cannot be used</li></ol>
<b>Parameters</b>	<ol style="list-style-type: none"><li>1. DC Voltage Threshold: (This threshold is preset in the <b>TeleCorder</b> through hardware components and cannot be changed via software).</li></ol>	<ol style="list-style-type: none"><li>1. VAR or Off-Hook Mode for each channel</li><li>2. Threshold in 4 levels</li><li>3. Turn off delay/VARspace: (4, 12, 32, or 100 seconds)</li><li>4. VAR Time-Out to limit long recordings and start a new recording: (20, 40, 60, or 80 minutes)</li></ol>

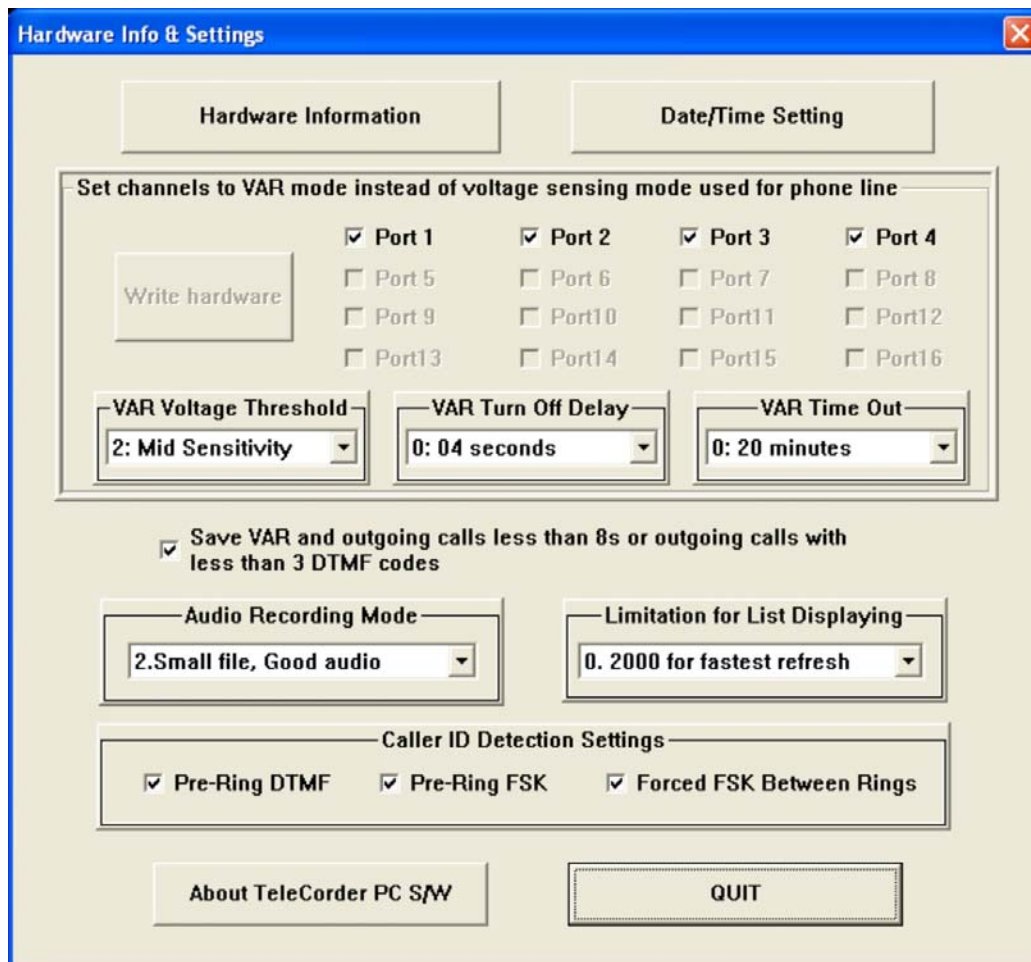
### 3.5 Setting Channels for Operation in VAR Mode

You can use either your PC or the keypad built into the **TeleCorder** to select Phone Line recording or VAR mode, and to change and confirm these and other operating parameters.



### 3.6 Configuring TeleCorder using a PC

Using your PC with the **TeleCorder** program running, select **Hardware** from the main screen. You will open the **Hardware Information** screen as shown here. From this button you will gain information about the **TeleCorder** including version number, capacity, media's usage, recorded call items, deleted call items, etc.



**3.6.1 Channel/Port Setup:** Each channel (Port) in the recorder can be set to start and stop recording using either audio activation (VAR) or voltage sensing. Channels showing a check mark in the boxes labeled **Port 1**, **Port 2**, **Port 3**, or **Port 4**, are set for VAR recording. Channels with no checkmark indicate they are set for phone line recording. For any channel you want to start/stop recording using the phone line voltage sensing mode, click on the box for that channel to remove the check mark, then click the **Write Hardware** button to confirm any changes. With 2 channel TC-02F, disregard Port 3 and Port 4 settings.

**3.6.2 VAR Voltage Threshold:** Set the threshold level to match the audio level on your audio source.

- L0: Extra Sensitive, suitable for weak audio sources with low background noise level (for example, with weak earphone or line-out recording).
- L1: High Sensitivity, suitable for normal line level audio sources with low background noise levels (normal phone handset earpiece audio or weak speaker of radio).
- L2: Mid Sensitivity, suitable for higher than normal audio levels and/or higher background noise levels (for recording from a noisy phone line when voltage sensing cannot be used due to non-standard voltages or with normal speaker audio from a radio).
- L3: Low Sensitivity, suitable for very high audio levels, and high background noise levels. Recording may stop if audio levels are too weak (phone recording with non-standard and very noisy DC voltages, or extra loud radio audio).

After making changes, click the button labeled **Write Hardware** to confirm any changes. You may be asked to quit the program and try again. You may also need to un-plug and re-connect the **TeleCorder** power or USB cable to successfully change the **TeleCorder** operating parameters.

**3.6.3 Turn Off Delay Time:** If any channels have VAR selected for recording start/stop, also select one of the four turn-off-delay options (**VAR Turn Off Delay**): 4, 12, 32 or 100 seconds. This setting will help to prevent recordings from ending during quiet periods. Click the **Write Hardware** button to confirm any changes.

**3.6.4 VAR Timeout:** If any channels have **VAR** selected for start/stop, set the timeout to one of the four choices: 20, 40, 60 or 80 minutes. This setting will limit the maximum length of a recording for easier management of long conversations or for when recording from broadcast radio where pauses may not be long enough to separate individual recordings using **VAR** for start/stop. If a recording reaches the maximum length of time that you select for **VAR Time Out**, that recording will end, and a new recording on that channel will begin. Click the **Write Hardware** button to confirm any changes.

**3.6.5 Save VAR and Outgoing Calls Less than 8s or Outgoing Calls with Less than 3 DTMF Codes:** Click on this option to place a check mark in its box if you want to save recordings that are less than 8 seconds long. If this box is not checked, **VAR** recordings shorter than 8 seconds, and outgoing telephone calls (using voltage sensing for start/stop) with less than 3 DTMF digits, will not be saved.

This setting is normally used if external noise causes frequent and unwanted false audio activated recordings, or if telephone line testing produces short off-hook conditions that are not associated with actual phone line usage. It is normal to record all activity on the monitored circuits. Use care when setting to delete short recordings. This setting can only be changed from the PC. It cannot be changed from the keypad.

**3.6.6 Hardware Information:** Click on this box to show information about your **TeleCorder**: hardware version, model type, number of calls recorded, number of calls deleted, total length of all recordings (in hours, minutes and seconds), total length of deleted recordings, and percentage of storage space used. Information displayed for number of files and duration is for files shown on the current list on the PC.

**3.6.7 Date/Time Setting:** Click on this box to copy the date/time setting from your PC to the **TeleCorder**.

**3.6.8 Audio Recording Mode:** From this sub-button you can set the quality of recordings.

Mode 0 --- Large file, good audio.

8bit linear PCM mode used in the 1<sup>st</sup> generation recorders.

Mode 1 --- Tiny file, poor audio.

2bit ADPCM mode.

Mode 2 --- Small file, good audio.

3bit ADPCM mode. Default mode set from factory.

Mode 3 --- Large file, best audio.

8bit nonlinear PCM mode.

**3.6.9 Limitation for List Displaying:** From this sub-button you can set the list display features to speed up the list refresh process or to have more items displayed in the lists of recordings shown on your PC in the main **TeleCorder** program screen. The default setting is 2000 for fastest speed. You can select a different number, such as 10000, 32768 or 65536, respectively. This selection is saved in software, not as a hardware setting.

**3.6.10 Caller ID Detection Settings:** From this sub-button you can set (turn on/off) the caller ID detection features.

**Pre-Ring DTMF Detection:** If the local caller ID mode is DTMF and sent before the ring, you must turn this feature on. Otherwise, if erroneous caller numbers are sometimes received, you should turn this feature off.

**Pre-Ring FSK Detection:** If the local caller ID mode is FSK and sent before the ring, you must turn this feature on. Otherwise, if erroneous caller numbers are sometimes received, you should turn this feature off.

**Forced FSK Between Rings:** If your caller ID signaling is FSK and sent between the rings, you must turn this feature on. This is the normal setting for North America.

**3.6.11 About TeleCorder PC S/W:** From this sub-button, you can see additional information about the **TeleCorder** software.

**3.6.12 QUIT:** Use this sub-button to exit the **Hardware Information & Settings** window.

**3.6.13 Notes:**

1. The above settings must be locked into the **TeleCorder** hardware by restarting the recorder. After any of the above settings are changed, they will not take effect until the recorder is restarted by turning off or disconnecting AC power to the **TeleCorder**, waiting a minimum of ten seconds, and powering the **TeleCorder** back on. Any changes made in software should now be locked into the recorder's internal memory.
2. To avoid interruption of active recordings, you should only set the above items while the recorder is idle. Wait until no channels are active or unplug inputs prior to changing settings.
3. After the settings have been changed, check to make sure that the recorder is functioning as expected.
4. The recorder listens for outgoing numbers dialed using DTMF/touch-tone signaling and stores them with the recording. It is possible for it to document and record false phone numbers when the recorder is in the VAR mode (particularly when recording broadcast radio music where the audio can mimic sounds of dialing). To avoid collecting and recording these erroneous numbers, you can use the PC interface to disable storing of dialed digit signaling.

### 3.7 Setting up your TeleCorder using the Built-in HandyPlayer Keypad

See **Section 4.2** for more detailed descriptions of HandyPlayer buttons and operation.

Using the **0** Setup key on the HandyPlayer, enter into the setup mode. When in the setup mode, parameters to change will be underlined. Use the **4** or **5** keys to change which character is highlighted and the **2** and **8** key to change the value of the highlighted character. Use the bottom right key to save changes or the bottom left key to quit.

**1. The setup modes provided on the HandyPlayer are:**

- a. Date/Time/Recording Mode
- b. Password
- c. Language for display
- d. **VAR** Channels (two with model **TC-02F**, four with **TC-04F**)  
The channels are listed from 1 to 4 (P1, P2, P3 and P4) as "xxxx",  
1 for **VAR**, 0 for non-**VAR** (use P1 and P2 with **TC-02F**, use P1, P2, P3, and P4 with **TC-04F**)
- e. **VAR** Threshold
- f. **VAR** Delay Time
- g. **VAR** TimeOut

Set individual **VAR** options as required to match the required recording parameters.

### 3.8 Removal of TeleCorder

Follow the installation procedure outlined above in reverse order.

## 4. Managing and Playing the Recordings

### 4.1 Managing and Playing Recordings with a PC

The **TeleCorder** does not require a PC for setup, recording or playing back recorded conversations. However, you may find it more convenient to operate it from a PC. With a PC you will also be able to convert recordings to standard wave files and archive them to storage on your PC. Playing selected recordings from a PC will not inhibit recording or simultaneous playback of recordings from the **TeleCorder** using its built-in HandyPlayer.

The PC does not have to be **ON** or connected to the **TeleCorder** for it to function. Connecting the **TeleCorder** USB cable to your PC and/or turning the PC power on or off will not stop the recorder from functioning. You can also disconnect the **TeleCorder** USB cable from a PC and connect it to a different PC without interrupting the **TeleCorder** operation.

#### 4.1.1 Connection:

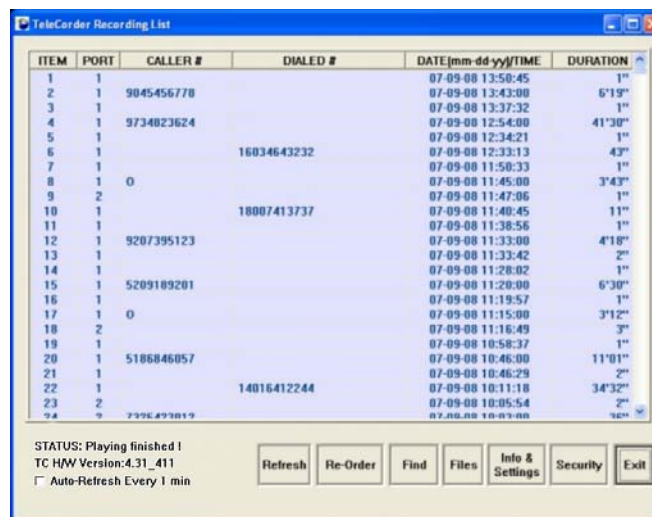
Connect the **TeleCorder** to the USB port in your PC using the provided USB cable. The PC used for managing/playing must be equipped with an available USB port, sound card as well as speakers, and use Windows® operating system Win-2000/XP/Vista/Win-7.

#### 4.1.2 Using the Utility Software:

You must install the supplied utility **TeleCorder** Manager/Player software from the provided disk to your computer prior to being able to manage the recorder from the PC or playing recordings through PC control (see manual page 6, Section 2.5, **Installing Software and Connecting to a PC**). The first time that you connect your PC to your **TeleCorder**, you may be asked to install the USB device driver. This driver should have been copied to your PC during install. If not, use the CD supplied with your **TeleCorder** to install the required USB driver following the instructions displayed on your computer.

After installing the software, place a short cut icon on the desktop for easy access (if it was not automatically installed during install). Click the software icon or the short cut created during the install and the recordings will be listed in the main window (as shown in the following screen image). The listed information includes the ITEM or sequential recording number, the PORT that was the source of the recording, CALLER ID NUMBER (if available when the recording was made) or DIALED NUMBER (if available when the recording was made), DATE and TIME the recording started, and the DURATION of each recording in minutes and seconds. All records are listed in the reverse order so that the most recent recording is indexed as item number 1.

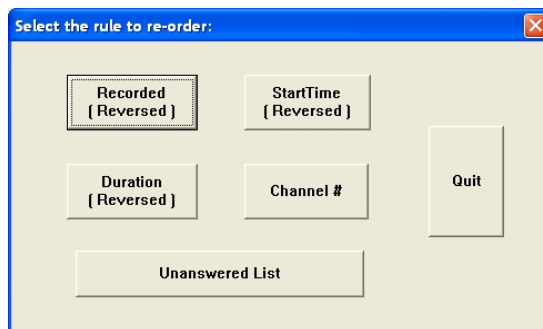
You can drag the slider bar on the right side of the display window to view the un-displayed part of the list. On the lower part of the form, there are buttons for Refresh, Re-Order, Find, Files, Info & Settings, Security (Lock/Unlock), and Exit.



The buttons provide the following functions:

- 4.1.3 Refresh:** Refresh the list to display the latest recordings in the **TeleCorder** at any time. There is also a check box for "Auto-Refresh every 1 minute".

- 4.1.4 Re-Order:** User can select one of the following ordering rules to re-order the list.
1. Recorded – provides a list based on the time recordings ended.
  2. Start Time – provides a list based on the time recordings started.
  3. Record Duration – provides a list based on the length of recordings.
  4. Channel Number – provides a list based on the channel number.
  5. Un-answered List – provides a list of calls on phone lines that were not answered.  
(Un-answered Listing is not supported with TC-02F & TC-04F)

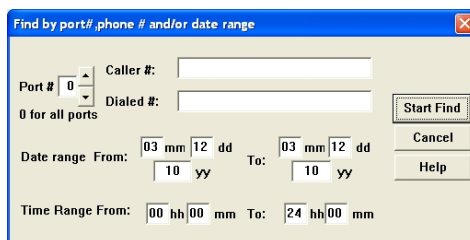


**4.1.5 Find:** You can search the records using a specific port/channel number, caller number, dialed number, and/or within a date and time range that you input.

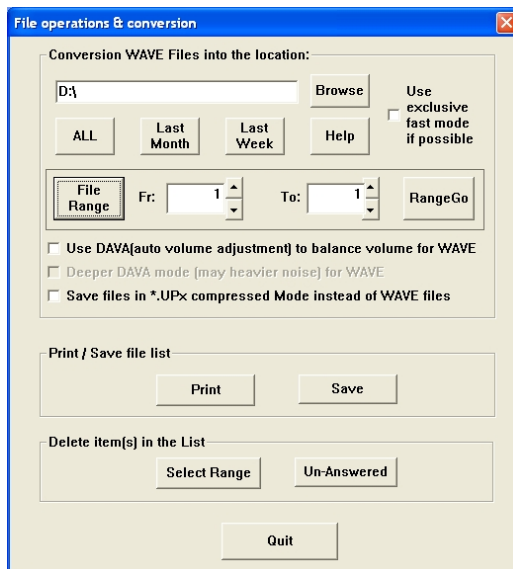
In the dialogue box, you can enter search conditions such as date range, digits from a phone number such as 010, 6256 etc. The searched results will display on the screen after you select “Start Search”.

You may also enter only a start and stop date range and all of the recorded items during the date range will be displayed.

The recorded items after a search can be played or used for further searching and for making Wave files in a batch job. Refer to the File Copy for more details.



**4.1.6 Files:** This button provides the following functions for the displayed files.



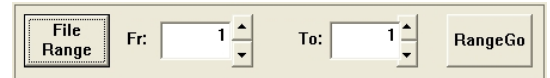
#### 4.1.7 Conversion of Recordings to WAVE or .UPx (TeleCorder) Files and Saving to PC

Wave Files are a widely used and supported multimedia File Format for the PC and other computer systems. Since the **TeleCorder** uses a unique format for saving the recordings in digital form, digitally converting them is a better way to exchange information with other systems that do not have **TeleCorder** software. You can use your PC to send audio recordings via e-mails or make backup CDs without worrying that others may not be able to play them. .UPx files are stored in the **TeleCorder** format.

There is an option to save individual recordings when they are selected for playback (select the button with red dot “●” from playback menu). Use the **Browse** button to select the folder on your PC hard drive where you wish to save the copies of the recordings.

These buttons provide the following functions:

- **All** --- Copy all of the records listed in the form, including both the ones displayed and the ones not displayed. This button would be used to copy all recordings retrieved by a search.
- **Last Month** --- The software will search again from all of the records in the **TeleCorder** within the 1<sup>st</sup> and 31<sup>st</sup> of last month, then perform a batch job to generate the wave files. This function is specially designed for users to make monthly backups.
- **Last Week** --- The software will search again from all of the records in the **TeleCorder** within the last week, and then it will do a batch job to generate the wave files.
- **Help** --- Produces a window with more detailed information about converting to wave files.
- **Use exclusive fast mode if possible** --- Use this button to speed up the file conversion.
- **File Range** --- Use this button to select a range of files that will be converted to wave files from the list of calls. For example, files numbered between 1 and 100. Select **RangeGo** button to see details on file conversion and save process prior to selecting **OK** to start the process.



All the generated files will be placed in the file folder you select in the window left of **Browse** button. After the files have been converted and saved to your PC, the list of calls on the **TeleCorder Recording List** will show only those files and needs to be refreshed to show all calls.

Each file refers to a unique record. The name of each file contains date and time of the call, caller or dialed number such as File **P2 10-26-04 09=11=10 DIAL TO 18609280377.WAV** (recording made on **TeleCorder** Port 2 on October 26th, 2004 at 09:11:10, call was outgoing and dialed to 1-860-928-0377). The files are suffixed with “.Wav”. You can change the file names as required, but you should not change the suffix unless there are special requirements.

**Volume Balance Setting (DAVA):** Digital Automatic Volume Adjustment capabilities. This is done in software, not hardware. If the volume levels of the 2 sides of a conversation are different, or if the line quality is not well adjusted, the Digital Automatic Volume Adjustment (**DAVA**) function will amplify the lower or far side to more closely match the level of the stronger or near side of a recorded conversation during playback. Since background noise will also be amplified together with the sound, there will be a compromise to permit weak voices to be played at higher levels without raising background noise levels to objectionable levels. There are 2 possible settings:

**USE DAVA (auto volume adjustment) for Volume Balance:** This setting is normally used to enable **DAVA** when converting single files or batches of files to wave files. It provides a medium amount of boost for weak audio.

**DEEPER DAVA Mode (may have more noise):** This setting provides a higher level of boost to weak audio but may also increase weak background noise levels.

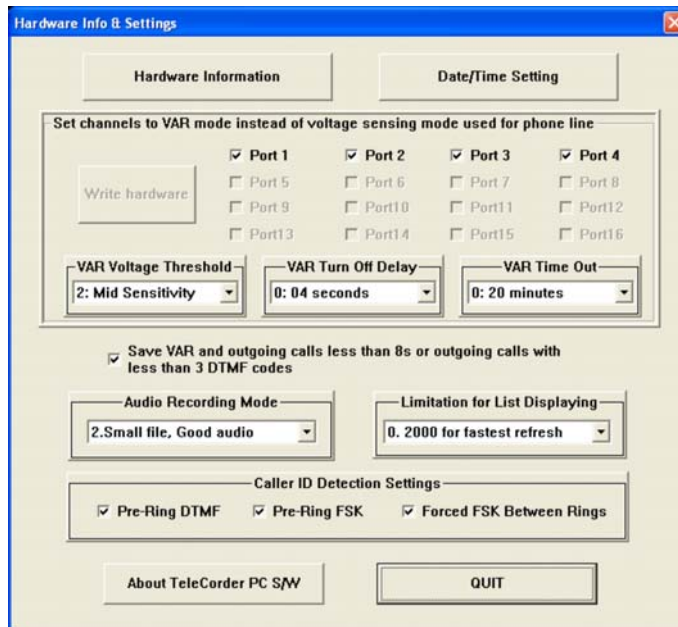
**4.1.8 Print and Save the List of Records:** The displayed list on the screen can be printed or saved into a “.txt” file. No matter how the call list is re-ordered, the searched and sorted list can be printed.

**4.1.9 Delete Recordings:** The recorded calls can be selectively or entirely deleted. To avoid unauthorized deletion, the password must be entered before deleting recordings. If no password has been set, you will need the master password that was supplied with your **TeleCorder**. Options are to delete the most recent recording, all recordings, or a selected range of recordings. Unanswered is not supported with TC-02F & TC-04F recorders.



From Delete Item(s) box click on **Select Range** button and follow screen messages to select which recordings you wish to delete from the recorder's hard drive. After selecting which recordings to delete, you will be provided with an option to “**Confirm: Files are deleted as desired?**”. Follow on screen instructions to recover the recordings as needed. If file recovery is selected, recovery will take place when the **TeleCorder** software is closed and re-opened. Recordings made after selecting recovery and re-opening the software will be permanently lost.

**4.1.10 Hardware:** From the **Info & Settings** button you can access all of the recorder's hardware and information settings:



**4.1.11 Hardware Information:** From this sub-button you will gain information about the **TeleCorder** including version number, capacity, media's usage, recorded call items, deleted call items, etc.

**4.1.12 Date/Time Setting:** From this sub-button you can read and set the real time clock in the recorder.

**4.1.13 Set Channels to VAR Mode Instead of Voltage Sensing Mode used for Recording from Phone Lines:** Each channel (Port) in the recorder can be set to start and stop recording using either audio activation (VAR) or voltage sensing. Channels showing a check mark in the boxes labeled **Port 1**, **Port 2**, **Port 3**, or **Port 4**, are set for VAR recording. Channels with no checkmark indicate they are set for phone line recording. For any channel you want to start/stop recording using the phone line voltage sensing mode, click on the box for that channel to remove the check mark, then click the **Write Hardware** button to confirm any changes.

**4.1.14 VAR Voltage Threshold:** Set the threshold level to match the audio level on your audio source.

L0: Extra Sensitive, suitable for weak audio sources with low background noise level: (for example, with weak earphone or line-out recording).

L1: High Sensitivity, suitable for normal line level audio sources with low background noise levels: (normal phone handset earpiece audio or weak speaker of radio).

L2: Mid Sensitivity, suitable for higher than normal audio levels and/or higher background noise levels: (for recording from a noisy phone line when voltage sensing cannot be used due to non-standard voltages or with normal speaker audio from a radio).

L3: Low Sensitivity, suitable for very high audio levels, and high background noise levels. Recording may stop if audio levels are too weak: (phone recording with non-standard and very noisy DC voltages, or extra loud radio audio).

After making changes, click the button labeled **Write Hardware** to confirm any changes. You may be asked to quit the program and try again. You may also need to unplug and re-connect the **TeleCorder** power or USB cable to successfully change the **TeleCorder** operating parameters.

**4.1.15 VAR Turn Off Delay:** If any channels have VAR selected for recording start/stop, also select one of the four turn off delay options (**VAR Turn Off Delay**): 4, 12, 32 or 100 seconds. This setting will help to prevent recordings from ending during quiet periods. Click the **Write Hardware** button to confirm any changes.

**4.1.16 VAR Time Out:** If any channels have VAR selected for start/stop, set the timeout to one of the four choices: 20, 40, 60 or 80 minutes. This setting will limit the maximum length of a recording for easier management of long conversations or for when recording from broadcast radio where pauses may not be long enough to separate individual recordings using VAR for start/stop. If a recording reaches the maximum length of time that you select for **VAR Time Out**, that recording will end, and a new recording on that channel will begin. Click the **Write Hardware** button to confirm any changes.

**4.1.17 Save VAR and Outgoing Calls Less than 8s or Outgoing Calls with Less than 3 DTMF Codes:** Click on this option to place a check mark in its box if you want to save recordings that are less than 8 seconds long. If this box is not checked, VAR recordings shorter than 8 seconds, and outgoing telephone calls (using voltage sensing for start/stop) with less than 3 DTMF digits, will not be saved.

This setting is normally used if external noise causes frequent and unwanted false audio activated recordings, or if telephone line testing produces short off-hook conditions that are not associated with actual phone line usage. It is normal to record all activity on the monitored circuits. Use care when setting to delete short recordings.

**4.1.18 Audio Recording Mode:** From this sub-button you can read or set the quality of recordings.

**Mode 0** --- Large file, Good audio.

8bit linear PCM mode, 28.80 MB/hour

**Mode 1** --- Tiny file, Poor audio.

2bit ADPCM mode, 7.20 MB/hour

**Mode 2** --- Small file, Good audio.

3bit ADPCM mode. Default mode set from factory, 10.84 MB/hour

**Mode 3** --- Large file, Best audio.

8bit nonlinear PCM mode, 28.80 MB/hour

**4.1.19 Limitation for List Displaying:** From this sub-button, you can select the number of recordings that will be listed on the PC to speed up the list refresh process. The default setting is 2,000. This setting will cause your PC to display the most recent 2,000 recordings after a refresh. You can select a different number, such as 10,000, 32,768 or 65,536. This selection is saved in software, not as a hardware setting and will reset to 2,000 if the software is closed and reopened.

**4.1.20 Caller ID Detection Settings:** From this sub-button you can set (turn on/off) the caller ID detection features.

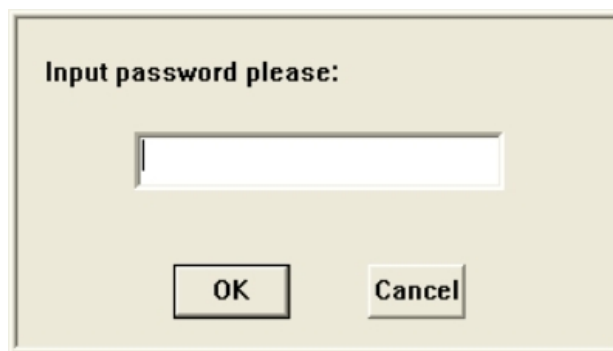
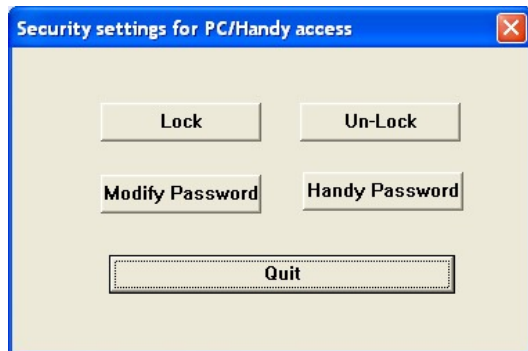
**Pre-Ring DTMF Detection:** If the local caller ID mode is DTMF and sent before the ring, you must turn this feature on. Otherwise, if erroneous caller numbers are sometimes received, you should turn this feature off.

**Pre-Ring FSK Detection:** If the local caller ID mode is FSK and sent before the ring, you must turn this feature on. Otherwise, if erroneous caller numbers are sometimes received, you should turn this feature off.

**Forced FSK Between Rings:** If your caller ID signaling is FSK and sent between the rings, you must turn this feature on. This is the normal setting for North America.

**4.1.21 About TeleCorder PC Software:** From this sub-button, you can view information about the software supplied with the TC-O2F and TC-O4F recorders.

**4.1.22 Quit:** From this sub-button, you can **Quit** or **Exit the Hardware Info & Settings** window.



**4.1.23 Lock/Unlock:** This button provides access to security settings for the recorder.

**Lock:** After the recorder is locked, it will ask the user to input a password each time a user tries to access the recorder. A password must be entered to use this function.

**Unlock:** To unlock the recorder so that a password is not needed, the password must be entered.

**4.1.24 Modify Password:** The recorder comes with a factory-set password, which is in the machine code that is set by its hardware and cannot be changed. This password is written on a sheet that comes with the recorder and will be an effective password forever (keep this password in a secure place). The **TeleCorder** also allows you to set a second password that can be easier to remember. Use the Modify Password button to set a second password of 6-8 characters. You must enter the factory-set password prior to being given the opportunity to add a second password. After the second password has been set, it will have the same effect as the first password. The new password is also stored in the hardware of the recorder so that it will work even if the recorder is connected to, and used with, another PC. Use Unlock to disable the second password.

**4.1.25 Built-in Keypad & USB Passwords:** The built-in keypad uses a 4 digit password that is stored in the recorder hardware. Although this password can be modified using the keypad, this button provides a second way to set the keypad password. Set it to “0000” and you will no longer be asked for a password.

The built-in keypad password can also be set or changed via USB connection from a PC. Open the **TeleCorder** SW and select the **SECURITY** button at the bottom of the screen. You will have option buttons for **LOCK**, **UNLOCK**, **MODIFY PASSWORD** (PC) and **HANDY PASSWORD**. To lock the unit from **HANDY PLAYER** (display and keypad) access only, select the **HANDY PASSWORD** button and enter the supplied Master Password when prompted. You will then be prompted to select a 1 to 4 digit numeric password (0001 to 9999). The unit is now locked and will require the Handy Password when accessed via the **HANDY PLAYER**. Power the unit off and on to lock your settings to memory.

If the **HANDY PLAYER** password is forgotten, the only way to reset it is via the USB and **TeleCorder** SW using the second Modified password or the Master Password.

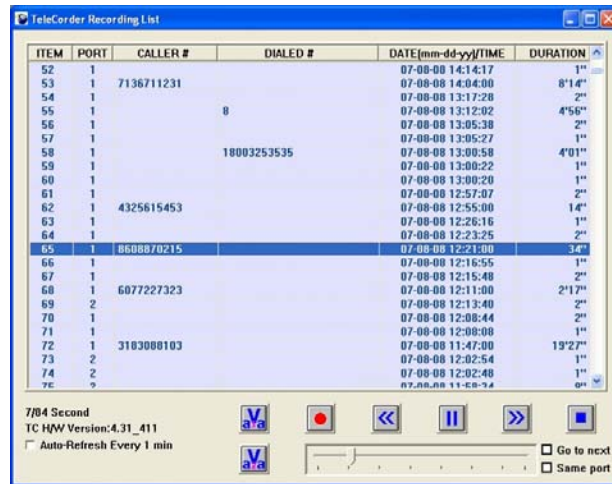
**Locking the Unit from Access via the USB Only:** Open the **TeleCorder** SW and select the **SECURITY** button at the bottom of the screen. You will have option buttons for **LOCK**, **UNLOCK**, **MODIFY PASSWORD** (PC) and **HANDY PASSWORD**. To lock the unit from USB access only using the supplied MASTER PASSWORD, select the **LOCK** button and enter the supplied Master Password when prompted. The unit is now locked and will require the Master Password when the SW is opened.

If you want to select a password of your own to use, select the **MODIFY PASSWORD** button and enter the supplied Master Password. When prompted, enter a 6-8 character alpha-numeric password you want, select OK and exit the SW. Power the unit off and on to lock your settings to memory.

If you want to remove password protection via USB, select the **UNLOCK** button and enter either the supplied Master Password or the second Modified password that you created.

With the unit locked via the USB connection, users can still have access to play a call via the **HANDY PLAYER** (display and keypad) at the unit. Settings can also be changed from the **HANDY PLAYER**, such as time & date, input type, language etc. They cannot however delete calls from the HDD. **Remember, whenever settings are modified, the TC needs to be powered off and back on to lock them into memory and start using the new settings!**

**4.1.26 Play Recordings from List:** To play a recording using your computers media player and speakers, select a file using your PC mouse and click on it. Large files may take a few seconds prior to opening. When playing recordings, buttons in the lower part of the screen will be swapped to a new set of buttons that are used to control various playback functions, as shown in the following image. If it is a long recording, the playback function buttons will not show until the recording has been completely transferred from **TeleCorder** to the PC.



The functions of these buttons are:

**aVa1 & aVa2:** The **aVa** buttons or “digital audio volume adjustments” are used to equalize unbalanced audio. While it will attempt to balance a call when there is difference in audio levels, it may not be able to bring extremely weak audio up enough to balance it. These volume adjustments only work in playback. Click the **aVa1** button and the recorded audio will be processed and played from the beginning with a medium level of Automatic Volume Adjustment. Click the **aVa2** button and the recorded audio will be processed and played from the beginning with a higher level of Automatic Volume Adjustment. You may also drag the horizontal slider bar to move the playback start point.

**Record ●:** The record button is used to convert the current highlighted call or call you are playing to a wave file and save it to your PC. These .wav files can be burned to a CD and played in most players. The recordings will be saved by default with a file name containing port number, date and time of the call, and caller ID or dialed numbers. There will be an option to rename the file when converting to a wave file.



**Fast Reverse <<:** Skips backward to replay a portion of a call.

**Pause II:** Used to temporarily stop a recording with the ability to resume listening where stopped.

**Fast Forward >>:** Skips forward to find a location in a call.

**Stop ■:** Stops the recording and returns to the beginning of the call.

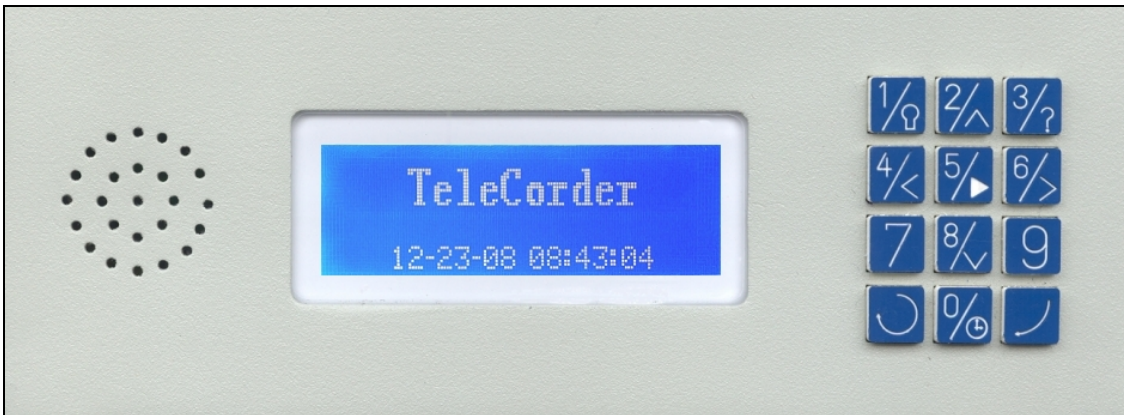
**Go to next:** When a check is placed in the **Go to next** box, after a call has finished playing it will automatically go to the next call and start playing it (useful when playing radio files with receive and transmit audio in separate files).

**Same port:** When a check is placed in the **Same port** box, and you also select **Go to next**, it will play only calls on the same port as the selected recording (useful when playing radio files when all conversations are on the same port/channel).

**Select Stop ■** to end playback or to play another recording.

The software does not have to be open on a PC for the recorder to function as a recorder. The PC software is only used for setup via USB, and via USB to playback recorded conversations, search the recordings, and, copy the recordings from the hard drive inside of the recorder to a PC.

## 4.2 Playing Recordings Using the Built-in Keypad



Numbers on the keypad buttons are for entering a password and other playback functions.

The keypad buttons are also used for setting up most **TeleCorder** operating parameters, selecting recordings to play, controlling playback, turning display backlight On/Off, adjusting internal speaker volume (two levels), and displaying the help menu.

You can listen to the recordings by using either the small speaker that is built into your **TeleCorder**, or, by connecting an external speaker or headset to the 3.5mm monaural mini-jack that is located on the left side of the recorder near its built-in speaker. Browsing and playback using the built-in keypad is limited to the most recent 2000 recordings.

HandyPlayer keypad buttons provide the following functions:	
	Increase or decrease the intensity of the LCD backlight
	Page down 3 in list of recordings when browsing Advance selected item in set-up and search modes
	Help menu On/Off
	Down 1 when browsing the recordings, backward when playing or programming
	View list of recordings, pause when playing, press twice to enter search mode
	Up 1 when browsing the list of recordings, forward when playing or programming
	View list of recordings
	Page up 3 in list of recordings when browsing Decrease selected item in set-up and search modes
	View list of recordings
	Stop playing recordings, return to start-up screen
	Volume adjustment (two levels) when playing, enter setup when not playing
	Enter, Start/Stop during playback, accept when setting or entering password



### 4.2.1 Description of the Displayed Symbols

Top line shows the index number, port/channel, date, time, and length of recording in seconds.

0002 P2 07-15 13:14 0086

Middle line shows the current selection including any caller ID or touchtone digits.

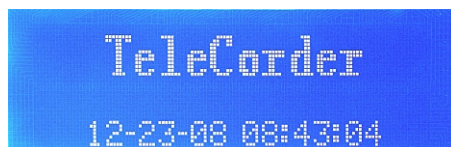
▶ #18005551212 (# indicates outgoing call)  
▶ ■ 8609280377 (■ indicates an incoming call)

### 4.2.2 Operational Procedures

Step 1: Make sure the **TeleCorder** recorder is powered on.

Step 2: The start-up message should be displayed on the LCD.

Step 3: If no function keys are depressed for 10 seconds, the LCD will display the date/time message.



If function keys **2, 4, 5, 6, 7, 8, or 9** are pressed once, the player will show the list of recordings for browsing or ask for a password prior to showing the list of recordings. Pressing these keys a second time provides a second function – see quick start listing on previous page. If the **0** key is pressed on the HandyPlayer when playing a recording, it will reduce the playback volume. If the **0** is pressed when not playing a recording, it will go into a set-up mode to change the date/time/recording mode and password for the recorder. If the **1** key is pressed, it will increase or decrease the LCD backlight. Key **3** will show a help menu.

Pressing the **5** key twice will enter a search mode. Use function keys to enter date (MM-DD), time (HH-MM), and Port (P00 for all ports, P01 for only Port 1, etc). Press enter key (↵) to search and display the number of found calls. Press the enter key again to start playing the oldest of the found calls, depress again to skip to newer recordings, or wait for it to end and the next recording will play. Depress the **5** key to pause. Use **2, 4, 6, and 8** keys to jump forward or back when a recording is being played.

Password Check



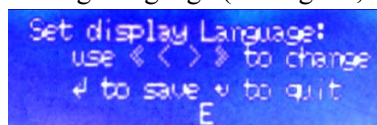
Setting Password



Setting Date, Time, and recording mode (0, 1, 2=default, or 3)

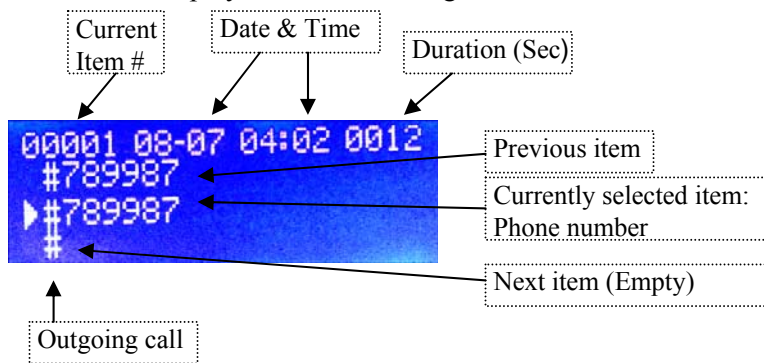


Setting Language (E=English, C=Chinese)

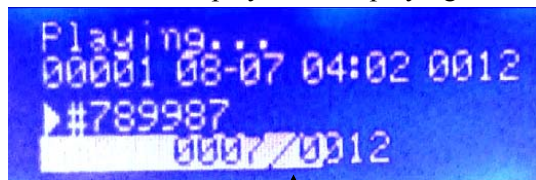




#### Information displayed while browsing




#### Information displayed while playing



Moving slide and time in seconds to show playback progress!

Step 4: If there are no recordings in the recorder, it will display an empty item with zero length.

Press the  button to return to the date/time message.

## 5. Guarantee & Liability

Your **TeleCorder** has a 12-month limited manufacturer guarantee. The guarantee is effective only for normal use. It is not valid under exceptional environmental or operational conditions, such as extreme temperatures or humidity levels, nor in the event of a lightning strike or similar damage from excessive voltages on connections. The guarantee is not valid if it has not been handled properly, for example, if it has been damaged by dropping. To qualify for the guarantee, contact your supplier or the manufacturer. The guarantee does not cover costs of sending to or from the supplier or manufacturer, and does not cover any expenses resulting from the failure of **TeleCorder**.

Correct functioning of the **TeleCorder** cannot be guaranteed under all conditions. The **TeleCorder** supplier and manufacturer cannot and will not accept any liability for loss of information or other damages due to the use or misuse of the **TeleCorder**. Suppliers and the manufacturer are not a source of official interpretation of laws and shall not be construed as a source for making decisions.

## 6. Specifications (subject to change without notice)

Number of Channels: Two with TC-02F, four with TC-04F  
Capacity (hours): 7,200 with TC-02F and TC-04F, when set for small file – good audio  
Security: Password (3): Master, PC, and HandyPlayer  
Digital Encoding: Voice quality good, A-law PCM mode (25% as specified, 28.80 MB/hour)  
Voice quality OK, G.726 2bit ADPCM mode (as specified, 7.20 MB/hour)  
Voice quality very good, G.726 3bit ADPCM mode, (75% as specified, 10.84 MB/hr.)  
Voice quality excellent, 8bit linear PCM mode (33% as specified, 28.80 MB/hour)  
Frequency Response: 340-3,400Hz, +/- 3db  
Sampling Rate: 8,000Hz  
Recording Trigger: Off-Hook (phone line voltage sensing for start/stop, <20vDC>) or VOX/VAR  
(audio activated for start/stop – 0.8Vpp, 0.4Vpp, 0.2Vpp, or 0.1Vpp)  
Line Impedance AC: >10k ohm  
Line Impedance DC: >10M ohm  
Ringer Equivalence: AC-REN – 0.6B  
Caller ID: FSK/DTMF  
Dialed Number: DTMF  
Internal Storage: Hard Drive  
Storage Limits: 65,536 files, 7,200 hours - with 80 gig hard drive (s/n H-359718 and higher).  
Automatic overwriting of oldest files when limits are reached.  
Display: Built-in 2-1/8" x 3/4" backlit LCD, or PC with included USB cable and software  
Size: 6-5/8" wide x 8-1/2" deep x 2-3/8" high, 170mm x 220mm x 55mm, (not including cables)  
Weight: 3.7 lbs., 1.6kg (not including cables and external power supply)  
Power Requirements: +5 Volts DC from supplied external 100-120V AC power adapter, 5W  
Approvals: FCC (TeleCorder Model F4, US:BCXRT06BF4), UL, CE  
Guarantee: Twelve month, limited  
Manufactured by: Beijing ChangXing Co., Ltd., China  
Distributed in U.S.A. by: Omnicron Electronics, Putnam, CT U.S.A.

## 7. Contact Information for Support and Service

Manufactured in China by: Beijing ChangXing., Co., Ltd., [www.telecorder.com](http://www.telecorder.com)

Distributed in USA by: Omnicron Electronics  
581 Liberty Highway  
Putnam, CT 06260

E-Mail: [support@omnicronelectronics.com](mailto:support@omnicronelectronics.com) Web: [www.omnicronelectronics.com](http://www.omnicronelectronics.com)

Phone: (860) 928-0377

Fax: (860) 928-6477

## 8. Popular Accessories

Contact your **TeleCorder** representative if you have questions or for assistance in selecting the proper cables or adapters for your application. Some of these accessories are shown below.

### TSA-3LM — Telephone Handset Supervisory Adapter

The TSA-3LM is the easiest way to monitor conversations on individual telephones. It can be used to provide a simple method of connecting the recorder to telephone handset or handset audio.

It can be used with most telephone styles that have a standard modular handset or headset jack (RJ-10, 4P4C). Simply connect one end of the cable in series with the telephone handset or headset cord and connect the other end to the recorder. The TSA-3LM has a 25' output cable that can be extended with the T25-EXT or other suitable phone line extension.



### TSA-SLM — Telephone Handset Supervisory Adapter, with ON/OFF Switch

The TSA-SLM provides all of the functions and features of the TSA-3LM with the addition of an on/off switch that is used to disconnect the telephone audio from your recorder when you do not want your conversation recorded. The TSA-SLM has a 25' output cable that can be extended with the T25-EXT.



### TSA-2A1 — Telephone Handset Supervisory Adapter, with Active Audio Mixer

Used to provide a method of connecting recorders to the handset (or headset) circuit of a phone that does not have normal side-tone (no mouthpiece audio is present on the earpiece of the phone). It can be used with telephone styles that have a standard modular handset or headset jack (4P4C). If the phone you wish to monitor has side-tone, as with most business phones, you should use the less expensive TSA-3LM adapter.



### RSA-U5 — Two-way Radio Adapter with Active Amplifiers and Optically Isolated PTT Sensing

Similar to the RSA-M3 and RSA-M4, the RSA-U5 has screwdriver adjustable amplifiers to boost weak receiver and transmitter audio levels and a low power optically sensing circuit to mute microphone audio when the radio is not transmitting. Most two-way radio applications do not require an adapter to mix receiver and transmitter audio. Some radios have audio levels that do not require an active amplifier and the Omnicron # RSA-M3 or RSA-M4 would be sufficient. Connections to radios that need to be made inside of the radio should only be done by a qualified technician.



### MOD-SC — Converts Modular Phone Cable to 3.5mm Mini-plug

The MOD-SC is used when you have a cable with standard RJ-11 single-line telephone type plug that you need to connect to audio from equipment with 3.5mm mini-plug jack. It has an RJ-11 jack on one end and a 3.5mm monaural mini-plug on the other end.

The MOD-SC is typically used to connect modular telephone line cables provided with digital audio recorders to the audio output of a radio receiver.



## 9. Notes

1. The **TC-02F** and **TC-04F** recorders come with a factory-set master password, which is in the machine code that is set by its hardware and cannot be changed. This password is written on a sheet that comes with the recorder and will be an effective password forever (keep this password in a secure place). If you lose the master password, your **TeleCorder** may have to be returned to a factory authorized service facility to determine what the password is from its internal hardware.
2. The recording ports (channels) are set for audio activated recording by default. Depending on what you are recording, phone, phone line, radio, you may have to change the factory settings.
3. When recording from phone lines, the **VAR port** boxes should not have a check in them. The **VAR voltage threshold**, **Turn Off Delay**, and **Time Out** will have no effect on operation in this mode. All other settings are functional in this mode.
4. Recording in audio activated mode may require adjustment of the recorder to the quality of your audio source. If the audio is weak... adjusting the Voltage Threshold more sensitive or the **Turn Off Delay** a little longer will stop the chopping of files, or multiple files for a single recording. If recording continuously the opposites would apply, less sensitive and a shorter delay.
5. The **Audio Recording Mode** is set at small file good audio as default. In this mode the audio quality is good and the compression rate will give you approximately 7,200 hrs of recordings on the recorders internal 80 gig HDD and the ability to view the last 65,000 calls.
6. Avoid shaking the **TeleCorder**, and keep it in an environment with moderate temperature and humidity that is suitable for electronic equipment.
7. There are no user-serviceable parts inside of the recorder. Refer servicing to qualified service personnel. If the clock does not maintain the correct time and date without external power, an internal battery may need to be replaced (Battery # CR2032).
8. Do not expose to rain or moisture.
9. If your **TeleCorder** came with software V2.42, it is compatible with PC running either 32 bit or 64 bit Operating Systems (OS). If you have **TeleCorder** that came with software V2.41 or earlier, it would have shipped with its device driver PID (Product I.D.) set for use with Windows PC running 32 bit operating systems (OS). To use the older recorders with a Windows 64 bit OS, the device driver PID setting needs to be changed from 6006 to 6001. To change the PID for use with 64 bit OS (Win-2000 to Win-7), install the older **TeleCorder** on a 32 bit PC and run the "SetUsbPidForV242PackOnAllOS.exe" file that is on the software CD supplied with V2.42 (from V2.42 software CD or via web download). After the PID is changed to 6001 the recorder will be compatible with software V2.42 on PC running either a 32 bit or 64 bit OS (the same as recorders supplied with V2.42). See: "**Read-me**" file on software CD or software download for additional information.

## 10. User Notes

**Password** \_\_\_\_\_

**Serial No.** \_\_\_\_\_

# *TeleCorder*

Voice Logging Recorders are distributed in the U.S.A. by:



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